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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,501	10/07/2003	Pekka A. Ranta	60091-00237	8427

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EXAMINER	
WEST, LEWIS G	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/679,501	RANTA ET AL.
	Examiner	**Art Unit**
	Lewis G. West	2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/07/03*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-23* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *07 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☒ All b)☐ Some * c)☐ None of:
1.☒ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *12/13/04*.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 9-18 and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Hakkinen (US 6,567,459).

Regarding claim 1, Hakkinen discloses a transmission method in a base transceiver station of a cellular telecommunication system, the base transceiver station applying antenna hopping between at least two antenna elements, the method comprising: transmitting a carrier carrying a first signal and a second signal, at least a portion of the first signal being subjected to a measurement for adjusting receive characteristics of a mobile station for a reception of at least a portion of the second signal; and applying antenna hopping to the carrier such that the at least a portion of the first signal and the at least a portion of the second signal are transmitted during an interval between two consecutive antenna hops between at least two antenna elements. (Col. 2 line 39-col. 3 line 31; col. 6 lines 9-34)

Regarding claim 2, Hakkinen discloses a method according to claim 1, wherein the transmitting step comprises transmitting the carrier carrying the first signal, at least a portion of which is subjected to a power measurement for adjusting receive gain of the mobile station for the reception of the at least a portion of the second signal. (col. 6 lines 9-34)

Regarding claim 3, Hakkinen discloses a method according to claim 1, further comprising: timing an antenna hop in a carrier transmission with respect to a signal transition from the first signal to the second signal such that there is a predetermined time gap between the signal transition and the antenna hop between the at least two antenna elements; and performing the antenna hop based on timing of the antenna hop. (Col. 2 lines 56-65)

Regarding claim 4, Hakkinen discloses a method according to claim 1, wherein the transmitting step comprises transmitting the carrier carrying the first signal and the second signal consecutively. (Col. 2 lines 56-65, as they are alternated they must occur one before or after the other, and therefore consecutively)

Regarding claim 5, Hakkinen discloses a method according to claim 1, wherein the applying step comprises applying the antenna hopping to the carrier according to a predetermined antenna hopping sequence comprising at least one antenna hop interval between two consecutive antenna hops, the antenna hopping sequence defining at least one of the following: antenna weighting applied to the at least two antenna elements during an antenna hop interval; and timing of the antenna hops. (Alternative language is used; antenna weighting occurs as power is controlled separately for different antennae; Col. 7 lines 3-27)

Regarding claim 6, Hakkinen discloses a method according to claim 5, wherein the applying step comprises applying the antenna hopping to the carrier according to the antenna hopping sequence optimized based on at least one criterion selected from a group comprising: effect of the antenna hopping sequence on a performance of a traffic channel carried by the carrier; effect of the antenna hopping sequence on a performance of a common control channel carried by the carrier; effect of the antenna hopping sequence on a performance of a broadcast channel carried by the carrier; effect of the antenna hopping sequence on a performance of a dedicated control channel carried by the carrier; feedback information from the mobile station; and effect of the antenna hopping sequence on the capacity of a cellular telecommunication system. (Alternative language is used, only one alternative limitation must be met; Col. 7 lines 3-27)

Regarding claim 7, Hakkinen discloses a method according to claim 5, wherein the applying step comprises applying antenna hopping to the carrier according to an antenna hopping sequence which maximizes the de-correlation of at least one channel carried by the carrier within at least one interleaving period. (Col. 6 lines 52-58)

Regarding claim 9, Hakkinen discloses a method according to claim 1, wherein the transmitting step comprises transmitting the carrier carrying a third signal transferring a channel selected from a group comprising at least one of: a traffic channel; and a dedicated control channel. (Col. 7 lines 3-46; a both a control channel dedicated to the mobile for controlling the power is used as well as traffic channels being established)

Regarding claim 10, Hakkinen discloses a method according to claim 1, further comprising applying frequency hopping to a transmission of a base station by using the carrier. (Col. 7 lines 28-46)

Regarding claim 11, Hakkinen discloses a method according to claim 1, wherein the transmitting step comprises transmitting the carrier carrying the first signal including a first time slot and the second signal including a second time slot, at least a portion of the first time slot being subjected to a measurement for adjusting the receive characteristics of the mobile station for the reception of at least a portion of the second time slot; and wherein the applying step comprises applying the antenna hopping to the carrier such that the at least a portion of the first time slot and the at least a portion of the second time slot are transmitted during an interval between the two consecutive antenna hops. (Col. 2 line 39-col. 3 line 31; col. 6 lines 9-34)

Regarding claim 12, Hakkinen discloses. a base transceiver station of a cellular telecommunication system, the base transceiver station comprising: a signal generating unit for generating a first signal and a second signal, the first signal being subjected to a measurement for adjusting receive characteristics of a mobile station for a reception of at least a portion of the second signal; a transmitter unit connected to the signal generating unit for generating a carrier carrying the first signal and the second signal; at least two antenna elements operationally connected to the transmitter unit for transmitting the carrier carrying the first signal and the second signal; and an antenna hop generator operationally connected to the transmitter unit for applying at least two antenna hops to the carrier such that the at least a portion of the first signal and the at least a portion of the second signal are transmitted during an interval between two consecutive antenna hops between at least two antenna elements. (Col. 2 line 39-col. 3 line 31; col. 6 lines 9-34)

Regarding claim 13, Hakkinen discloses a base transceiver station according to claim 12, wherein the signal generating unit is configured to generate the first signal, at least a portion of which is subjected to a power measurement for adjusting receive gain of the mobile station for the reception of the at least a portion of the second signal. (Col. 6 lines 9-34)

Regarding claim 14, Hakkinen discloses a base transceiver station according to claim 12, wherein the antenna hop generator is configured to time an antenna hop in a carrier transmission with respect to a signal transition from the first signal to the second signal such that there is a predetermined time gap between the signal transition and the antenna hop between the at least two antenna elements; and wherein the antenna hop generator is configured to perform the antenna hop based on timing of the antenna hop. (Col. 2 lines 56-65)

Regarding claim 15, Hakkinen discloses a base transceiver station according to claim 12, wherein the transmitter unit is configured to generate the carrier carrying the first signal and the second signal consecutively. (Col. 2 lines 56-65, as they are alternated they must occur one before or after the other, and therefore consecutively)

Regarding claim 16, Hakkinen discloses a base transceiver station according to claim 12, further comprising: an antenna hop controller connected to the antenna hop generator, the antenna hop controller for providing a predetermined antenna hopping sequence comprising an antenna hop interval between two consecutive antenna hops, the antenna hopping sequence defining at least one of the following: antenna weighting applied to the at least two antenna elements during the antenna hop interval, and timing of the antenna hops; and wherein the antenna hop generator is configured to apply the at least two antenna hops to the carrier according to the antenna hopping sequence. (Alternative language is used; antenna weighting occurs as power is controlled separately for different antennae; Col. 7 lines 3-27)

Regarding claim 17, Hakkinen discloses a base transceiver station according to claim 16, wherein the antenna hop controller is configured to provide an antenna hopping sequence which maximizes a de-correlation of at least one channel carried by the carrier within at least one interleaving period. (Col. 6 lines 52-58)

Regarding claim 18, Hakkinen discloses a base transceiver station according to claim 16, wherein the antenna hop controller is configured to provide an antenna hopping sequence optimized based on at least one criterion selected from a group comprising: effect of the antenna hopping sequence on a performance of a traffic channel carried by the carrier; effect of the antenna hopping sequence on a performance of a common control channel carried by the carrier; effect of the antenna hopping sequence on a performance of a broadcast channel carried by the carrier; effect of the antenna hopping sequence on a performance of a dedicated control channel carried by the carrier; effect of the antenna hopping sequence on a capacity of a cellular telecommunication system; and feedback information from the mobile station. (Alternative language is used, only one alternative limitation must be met; Col. 7 lines 3-27)

Regarding claim 20, Hakkinen discloses a base transceiver station according to claim 12, wherein the signal generating unit is configured to generate a third signal transferring a channel selected from a group comprising at least one of: a traffic channel, a dedicated control channel; and the transmitter unit is configured to generate the carrier carrying the third signal. (Col. 7 lines 3-46; a both a control channel dedicated to the mobile for controlling the power is used as well as traffic channels being established)

Regarding claim 21, Hakkinen discloses a base transceiver station according to claim 12, wherein the transmitter unit is configured to generate a plurality of carriers; and wherein the transmitter unit is configured to apply frequency hopping to a transmission of the base station by using the carrier. (Col. 7 lines 28-46)

Regarding claim 22, Hakkinen discloses a base transceiver station according to claim 12, wherein the signal generating unit is configured to generate the first signal including a first time slot and the second signal including a second time slot, at least a portion of the first time slot being subjected to a measurement for adjusting the receive characteristics of the mobile station for the reception of at least a portion of the second time slot; and wherein the antenna hop generator is configured to apply antenna hopping to the carrier such that the at least a portion of the first time slot and the at least a portion of the second time slot are transmitted during an interval between the two consecutive antenna hops. (Col. 7 lines 3-28)

Regarding claim 23, Hakkinen discloses a base transceiver station of a telecommunication system, the base transceiver station comprising: transmitting means for transmitting a carrier carrying a first signal and a second signal, at least a portion of the first signal being subjected to a measurement for adjusting receive characteristics of a mobile station for a reception of at least a portion of the second signal; and applying means for applying antenna hopping to the carrier such that the at least a portion of the first signal and the at least a portion of the second signal are transmitted during an interval between two consecutive antenna hops between at least two antenna elements. (Col. 2 line 39-col. 3 line 31; col. 6 lines 9-34)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hakkinen (US 6,567,459).

Regarding claim 8, Hakkinen discloses a method according to claim 1, wherein the transmitting step comprises transmitting the carrier carrying the second signal transferring a channel, but does not expressly disclose a broadcast or common control channel, but does clearly show setting up channels in a UMTS or GSM system which would inherently involve the use of common control and broadcast channels. Therefore it would have been obvious to use a broadcast or common control channel, because given the clear suggestion that CDMA may be implemented system wide power control, such as reducing the total power in the system would be necessary and require signaling to all mobiles.

Regarding claim 19, Hakkinen discloses a base transceiver station according to claim 12, wherein the signal generating unit is configured to generate the second signal transferring a channel, but does not expressly disclose a broadcast or common control channel, but does clearly show setting up channels in a UMTS or GSM system which would inherently involve the use of common control and broadcast channels. Therefore it would have been obvious to use a broadcast or common control channel, because given the clear suggestion that CDMA may be implemented system wide power control, such as reducing the total power in the system would be necessary and require signaling to all mobiles.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis G. West whose telephone number is 571-272-7859. The examiner can normally be reached on Monday-Friday 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lewis G. West
Primary Examiner
Art Unit 2618

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